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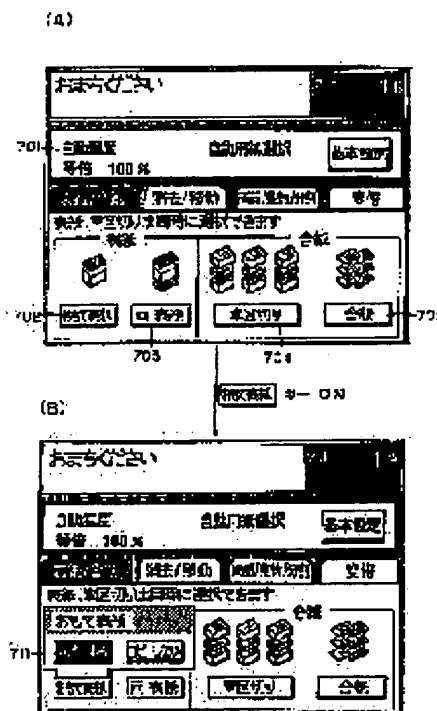
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## (54) IMAGE FORMING DEVICE

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To improve operability by displaying that copying operation can not be performed as it is when an operator selects a mode for being accompanied with initial setting and necessary setting is not performed.

**SOLUTION:** The figures show screen transition when a cover/interleaf key is pressed in a state where a cover exclusive tray is not set in the initial setting; the figure (A) shows the menu screen for a cover/interleaf mode, and a surface cover key 702 for selecting a surface cover mode, a both-surface key 703 for selecting a both-surface mode, and an interleaf key 705 for selecting the interleaf mode, etc., are prepared. The figure (B) shows the screen obtained when the surface cover mode is selected, and a copying key 711 showing that picture copy is also performed on the paper for the cover is reversely displayed. When the cover exclusive tray is not set, the copying operation can not be performed; so that an LED equipped to a start key is turned on in red showing that copying operation can not be performed.



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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] It is related with image formation equipment and a twist concrete target at the mode setting function of a copying machine at this invention.

[0002]

[Description of the Prior Art] In the copying machine in recent years, the multi-functionalization progresses and various copy modes are prepared. It is also possible to set two or more preparations, several sorts of paper sizes, and a form class to coincidence for a feed unit. Moreover, it is common that an initialization means by which an initial condition-setup of a copying machine can be performed in such a copying machine is established, for example, in case cover mode which adds a cover to the copied form is performed, a feeding unit setting means only for covers by which it can specify from which feed unit paper is fed to the form for covers etc. is known. By performing this setup, it becomes possible to make automatic selection at a copying machine side, without specifying from which feed unit paper is fed to the form for covers each time at the time of selection in cover mode.

[0003] However, in the condition that the feeding unit only for covers is not set up, since copy actuation cannot be carried out, when selection actuation in cover mode is performed, when the feeding unit only for covers is not set up, the selection actuation is made into an invalid, and a message and an alert inform an operator of that. That is, when the mode with an operator is chosen, when initial setting of a copying machine required in order to perform the mode is not made, the selection actuation is made into an invalid, and, generally control to which a setup is urged by an alert etc. is known.

[0004] Invention of JP,5-323737,A detects the size and thickness of paper of a manuscript automatically at the time of initiation of copy actuation, when the setup which feeds paper to a copying paper and corresponds is not carried out from the corresponding size and the feed unit to which thickness of paper is set, it interrupts actuation, and it notifies an operator of that in an alert, and a setup is urged to it.

[0005]

[Problem(s) to be Solved by the Invention] However, there is no change in it becoming invalid selection operating the mode at that time, and it must rechoose the mode as it again after a setup in the place to which the operator was notified of initial setting of a copying machine not being carried out by the alert or the message, and a setup was urged.

[0006] This invention is what is going to solve the fault like \*\*\*\*. Invention of claim 1 Mode selection actuation is succeedingly enabled as effective [ without repealing mode selection actuation ], even if it is in the condition that the required setup is not made, when an operator chooses the mode accompanied by a setup by initial setting. On the other hand With a propriety expression means of operation, if it remains as it is, it is that it is shown that copy actuation cannot be performed and aims at raising operability.

[0007] When an operator chooses the mode accompanied by a setup by initial setting, even if invention of claim 2 is in the condition that the required setup is not made Mode selection actuation is succeedingly enabled as effective [ without repealing mode selection actuation ]. On the other hand By the message which tells an operator a purport to be set up by initial setting being shown in the location

used as the hindrance of the mode selection on a display means Specifying the reason for the ability not performing copy actuation to an operator, mode selection actuation can be enabled continuously and it aims at raising operability.

[0008] When an operator chooses the mode accompanied by a setup by initial setting, even if invention of claim 3 is in the condition that the required setup is not made Mode selection actuation is succeedingly enabled as effective [ without repealing mode selection actuation ]. By displaying the alert which tells an operator a purport to be set up by initial setting on the conspicuous location on a display means, when copy actuation initiation actuation is performed, while a setup required of initial setting has not been made by it The lack of a setting in initial setting can be made to reconfirm, and it aims at raising operability.

[0009]

[Means for Solving the Problem] A display means by which invention of claim 1 displays sheet paper cassette information, the selected mode, a message, an alert, etc. using display devices, such as liquid crystal, The mode selection means which repeats a transparence sheet-like touch panel switch on the display device of said display means, and enables selection in the mode according to detection of a depression location, The initialization means for performing an initial condition-setup of the equipment set by an operator's user-friendliness, A propriety judging means of operation by which the copy actuation by the mode which the operator chose judges whether activation [ with the established state in said initialization means ] on relation is possible, Use classification by color of LED etc. and a propriety expression means of operation to express the activation propriety of copy actuation is provided. The mode which the operator tried to choose is the mode accompanied by a setup with said initialization means. And even if it is in the condition that the setup is not made in initial setting, while enabling mode selection actuation succeedingly as preferentially effective in mode selection actuation of an operator When it is characterized by showing that it is in the condition that copy actuation cannot be performed, it has it with said propriety expression means of operation and an operator chooses the mode accompanied by a setup by initial setting, even if it is in the condition that the required setup is not made Without barring mode selection actuation, if it remains as it is, it expresses that copy actuation cannot be performed, and improvement in operability is aimed at.

[0010] A display means by which invention of claim 2 displays sheet paper cassette information, the selected mode, a message, an alert, etc. using display devices, such as liquid crystal, The mode selection means which repeats a transparence sheet-like touch panel switch on the display device of said display means, and enables selection in the mode according to detection of a depression location, The initialization means for performing an initial condition-setup of the equipment set by an operator's user-friendliness, A propriety judging means of operation by which the copy actuation by the mode which the operator chose judges whether activation [ with the established state in said initialization means ] on relation is possible, Use classification by color of LED etc. and a propriety expression means of operation to express the activation propriety of copy actuation is provided. The mode which the operator tried to choose is the mode accompanied by a setup with said initialization means. And even if it is in the condition that the setup is not made in initial setting, while enabling mode selection actuation succeedingly as preferentially effective in mode selection actuation of an operator It is characterized by showing the message which tells an operator a purport to be set up by initial setting in the location used as the hindrance of the mode selection on said display means. It has, and by the message which tells an operator a purport to be set up by initial setting being shown, it expresses more clearly why copy actuation cannot be performed in the location used as the hindrance of the mode selection on a display means, and improvement in operability is further aimed at in it.

[0011] A display means by which invention of claim 3 displays sheet paper cassette information, the selected mode, a message, an alert, etc. using display devices, such as liquid crystal, The mode selection means which repeats a transparence sheet-like touch panel switch on the display device of said display means, and enables selection in the mode according to detection of a depression location, The initialization means for performing an initial condition-setup of the equipment set by an operator's user-friendliness, A propriety judging means of operation by which the copy actuation by the mode which the

operator chose judges whether activation [ with the established state in said initialization means ] on relation is possible, A propriety expression means of operation to use classification by color of LED etc. and to express the activation propriety of copy actuation, The mode which was going to possess the initiation directions means for directing initiation of copy actuation, and the operator tried to choose Mode selection actuation is succeedingly enabled as preferentially effective in mode selection actuation of an operator, even if it is in those with the mode accompanied by a setup by initial setting, and the condition that the setup is not made in initial setting. While the setup required of initial setting is not made by it, when said initiation directions means is operated, It is characterized by displaying the alert which tells an operator a purport to be set up by initial setting on the conspicuous location on said display means. By displaying the alert which tells an operator a purport to be set up by initial setting on the conspicuous location on a display means, when copy actuation initiation actuation is performed, while it has and a required setup has not been made by it by initial setting Even if it is the case where it has been forgotten why for an operator to be unable to perform copy actuation, it enables it to reconfirm, and improvement in operability is aimed at further.

[0012]

[Embodiment of the Invention] Drawing 1 is the external view of the image formation equipment with which this invention is applied, and, for the body of a copying machine, and 102, as for a sorter, 104, or 107, an automatic manuscript feed gear (ADF) and 103 are [ 101 / a medium tray and 108 ] control units among drawing.

[0013] Drawing 2 is the flat-surface expansion external view of the control unit 108 shown in drawing 1, and this control unit 108 is constituted as everyone knows by the touch panel key arranged on hardkeys, such as a ten key, liquid crystal, and liquid crystal, and 201 is a ten key and sets up copy number of sheets etc. with this ten key 201. 202 is a liquid crystal display screen, and while displaying the setting screen in feed stage information or the mode, a message, etc., the touch panel is arranged in piles. 203 is used when the mode which displays the method of a symbol description or actuation by the guidance key shifts. 204 is a program key, and when performing the registration and the call of a functional setup which are often used, it is used. 205 is an initialization key, and in case it performs an initial condition-setup of the copying machine set by an operator's user-friendliness, it is used. 206 is a brilliance-control tongue, and when adjusting the contrast of a liquid crystal display screen, it is used. 207 is a mode clearance and a preheating / timer key, and when canceling the set-up contents, performing default mode setting and considering as a preheating condition by the continuation depression beyond fixed time amount, or when canceling the preheating condition of a copying machine, it is used. Moreover, it is used also when performing discharge in case a copying machine is in an OFF condition in timer mode. It is an interrupt key, 208 interrupts during copy actuation, and when copying another manuscript, it is used. 209 is clearance/slip key, and when interrupting the time of clearing copy number of sheets, and copy actuation, it is used. 210 is a start key, and when directing initiation of a copy, it is used. Moreover, the start key 210 is equipped with LED of green / red 2 color, and when LED green when copy actuation is possible is impossible for copy actuation, red LED lights up.

[0014] Drawing 3 is drawing showing an example of the actuation screen displayed on liquid crystal, the touch panel has piled up on the screen, it doubles with the picture displayed on liquid crystal, and a key is arranged. In drawing 3 301 The message indicator area of "it can copy", "waiting", etc., 302 a concentration selection key and 304 for the number display of \*\*, and 303 A medium tray selection key, A form assignment variable power mode key and 306 305 A special manuscript delivery mode key, 307 -- a sort mode key and 308 -- for a punch mode key and 311, as for both-sides / division / intensive mode key and 313, a variable power mode key and 312 are [ a stack mode key and 309 / a staple mode key and 310 / elimination / move mode key, and 314 ] a cover / interleaving paper mode key.

[0015] Drawing 4 is the block diagram showing the configuration of a body control unit, and body control is performed in drawing 4 by CPU401, ROM402, RAM403, un-volatilizing [ RAM / 404 ], serial interface 405, a timer 406, and the Maine control section 415 that built in the clock IC416 grade. The various alternating current loads 412 and the various direct-current loads 413, such as a motor for driving a photo conductor, a feed motor in the feed unit 407 or the double-sided unit 408, and a clutch,

are connected to this control section 415. It connects through serial interface 405 in the after-treatment equipments 409 and control units 411, such as automatic manuscript feeding equipment (ADF) 410 and a sorter.

[0016] Drawing 5 is the block diagram showing the configuration of a control unit control unit, and, for CPU by which 501 controls this whole control unit, the system reset by which an address latch and 503 were connected to ROM and 504 was connected to CPU501 for 502, and 505, as for an LED driver and 507, an address decoder and 506 are [ a keyboard and 508 ] LCD controllers in drawing 5 . The LED driver 506, the keyboard 507, the touch panel 512 of an analog, the LCD module 511 and ROM509 for indicative datas, and the RAM510 grade other than the address bus from CPU501 and a data bus are connected to the LCD controller 508. Moreover, the optical transceiver 513 which performs the exterior and serial communication is connected to CPU501.

[0017] Drawing 6 is drawing showing an example of the initialization mode for the owner of a copying machine, a manager, or an operator to perform an initial condition-setup of a copying machine according to user-friendliness, and this mode is prepared apart from the screen for setting up copy mode as shown in drawing 3 , and as shown in drawing 6 (A), it is displayed [ it is the depression of the initialization key 205 ( drawing 2 ), and ]. The auto clear setup 601 which sets up auto clear time amount, the auto preheating time, etc. in the initialization mode, the special tray setup 602 which sets up that the special form is set to a medium tray, those with an audible tone / \*\*\*\*, etc., The feed setting 605 grade which sets up the control unit specification setup 603 which sets up the specification of a control unit, the rate setup 604 of fixed variable power which changes the fixed scale factor at the time of fixed form variable power, selection of a priority feeding stage, effective/invalid of an automatic form optional feature, etc., and various setup can be performed. In addition, if an end key 600 is pushed, this initialization mode will be ended and it will return to the screen which sets up the usual copy mode.

[0018] When the special tray setup 602 shown in drawing 6 (A) is pushed, a screen As shown in drawing 6 (B), it changes to the screen of a special tray setup. On the tray 610 only for covers The tray which feeds paper to the form for the covers at the time of performing cover mode can be set up with the setting means 611, and the tray which feeds paper to the form for the interleaving paper at the time of performing interleaving paper mode can be set up with the setting means 613 on the tray 612 only for interleaving paper. As for the example of this drawing 6 (B), a tray 1 is set up as a medium tray only for covers, and an interleaving paper tray is in the condition which is not set up. In addition, the various contents of a setting set up in initial setting are memorized by a body control unit un-volatilizing [ RAM / 404 ].

[0019] Drawing 7 is in the condition that the trays 610 and 611 only for covers are not set up in initial setting shown in drawing 6 . (Invention of claim 1) It is what showed the screen transition at the time of the cover / interleaving paper key 314 shown in drawing 3 being pressed. Drawing 7 (A) It is the menu screen in a cover / interleaving paper mode. The interleaving paper key 705 for choosing the chapter break key 704 for choosing both the cover key 703 for choosing the upper cover key 702 for choosing upper cover mode and both cover mode and chapter break mode and interleaving paper mode etc. is prepared. Moreover, the basic setting display column 701 for indicating the contents of selection of a basic function shown in drawing 3 by list is also displayed collectively. Drawing 7 (B) is a screen where upper cover mode is chosen, and the inverse video of the key 711 which also shows carrying out an image copy to the form of a front form and to copy is carried out.

[0020] If the cover / interleaving paper key 314 which is the flow chart which shows the processing at this time, and was shown in drawing 3 are pressed (S1), drawing 8 If the menu screen in in the cover / interleaving paper mode of drawing 7 (A) is displayed (S2) and the upper cover key 702 is pressed (S3) The mode which copies an image also to the form for covers is chosen by the default, and the key 711 "to copy" serves as inverse video at the same time it chooses upper cover mode (S4). the case where the tray only for covers is set up with reference to the contents of a setting of the tray only for covers memorized by body un-volatilizing [ RAM / 404 ] (S5) at this time -- (S6) -- processing is completed as it is. Since (S6) and copy actuation cannot be performed when the tray only for covers is not set up, processing is ended after making LED with which the start key 210 is equipped and which is not

illustrated turn on in the red which shows a copy actuation failure (S7).

[0021] (Invention of claim 2) Drawing 9 is in the condition that the trays 610 and 611 only for covers are not set up in initial setting of drawing 6, and shows the screen transition at the time of the cover / interleaving paper key 314 of drawing 3 being pressed. That the trays 610 and 611 only for covers are not set up except 910 currently displayed on the message area which does not bar mode selection actuation of an operator. It is the same as the screen transition shown in drawing 7 (B), and drawing 9 (A) is the menu screen in a display / interleaving paper mode, drawing 9 (B) is a screen where upper cover mode is chosen, and the inverse video of the "key to copy" 911 which also show carrying out an image copy to the form of a front form is carried out.

[0022] If drawing 10 is the flow chart which shows the processing at this time and the cover / interleaving paper key 314 of drawing 3 are pressed (S11) The menu screen 9 in in the cover / interleaving paper mode of drawing 9 (A) is displayed (S12). The mode which carries out an image copy is chosen also as the form for covers by the default, and the key 911 "to copy" serves as inverse video at the same time it will choose upper cover mode, if the upper cover key 902 is pressed (S13) (S14). the case where the tray only for covers is set up with reference to the contents of a setting of the tray only for covers memorized by body un-volatilizing [ RAM / 404 ] (S15) at this time -- (S16) -- processing is ended as it is. Since (S16) and copy actuation cannot be performed when there is no tray only for covers \*\*\*\*\*, while making LED with which the start key 210 ( drawing 2 ) is equipped and which is not illustrated turn on in the red which shows a copy actuation failure (S17), the processing which displayed the message on the message area is ended (S18).

[0023] Drawing 11 is in the condition that the trays 610 and 611 only for covers are not set up in initial setting of drawing 6 ( drawing 11 (A)), and shows image transition ( drawing 11 (B)) while the key 911 in the upper cover mode of drawing 9 "to copy" is set up and the tray 610.611 only for covers has not been set up 911 and after that by it, when a start key 210 ( drawing 2 ) is pushed. If a start key 210 is pushed, in order to tell an operator clearly that the tray only for covers does not continue being set up, it is displaying as an alert using the whole screen ( drawing 11 (B)).

[0024] If drawing 12 is the flow chart which shows the processing at this time and the cover / interleaving paper key 314 of drawing 3 are pressed (S21) The menu screen 9 in in the cover / interleaving paper mode of drawing 9 (A) is displayed (S22). The mode which copies an image also to the form for covers is chosen by the default, and the key 911 "to copy" serves as inverse video at the same time it will choose upper cover mode, if the upper cover key 902 is pressed (S23) (S24). the case where the tray only for covers is set up with reference to the contents of a setting of the tray only for covers memorized by body un-volatilizing [ RAM / 404 ] (S25) at this time -- (S26) -- processing is ended as it is. Since (S26) and copy actuation cannot be performed when the tray only for covers is not set up, while making LDE with which the start key 210 is equipped and which is not illustrated turn on in the red which shows a copy actuation failure (S27), a message is displayed on a message area and processing (S28) is ended. Furthermore, if a start key 210 is pushed with this condition (S29), an alert will be displayed in order to tell a setting [ the tray only for covers / continue ]-up operator (S30).

[0025]

[Effect of the Invention] A display means by which invention of claim 1 displays sheet paper cassette information, the selected mode, a message, an alert, etc. using display devices, such as liquid crystal, The mode selection means which repeats a transparence sheet-like touch panel switch on the display device of said display means, and enables selection in the mode according to detection of a depression location, The initialization means for performing an initial condition-setup of the equipment set by an operator's user-friendliness, A propriety judging means of operation by which the copy actuation by the mode which the operator chose judges whether activation [ with the established state in said initialization means ] on relation is possible, Use classification by color of LED etc. and a propriety expression means of operation to express the activation propriety of copy actuation is provided. The mode which the operator tried to choose is the mode accompanied by a setup with said initialization means. And even if it is in the condition that the setup is not made in initial setting, while enabling mode selection actuation succeedingly as preferentially effective in mode selection actuation of an operator

Since it was shown that it is in the condition that copy actuation cannot be performed with a propriety expression means of operation Without barring mode selection actuation, even if it is in the condition that the required setup is not made, when an operator chooses the mode accompanied by a setup by initial setting, if it remains as it is, it can express that copy actuation cannot be performed, and improvement in operability can be aimed at.

[0026] A display means by which invention of claim 2 displays sheet paper cassette information, the selected mode, a message, an alert, etc. using display devices, such as liquid crystal, The mode selection means which repeats a transparence sheet-like touch panel switch on the display device of said display means, and enables selection in the mode according to detection of a depression location, The initialization means for performing an initial condition-setup of the equipment set by an operator's user-friendliness, A propriety judging means of operation by which the copy actuation by the mode which the operator chose judges whether activation [ with the established state in said initialization means ] on relation is possible, Use classification by color of LED etc. and a propriety expression means of operation to express the activation propriety of copy actuation is provided. The mode which the operator tried to choose is the mode accompanied by a setup with said initialization means. And even if it is in the condition that the setup is not made in initial setting, while enabling mode selection actuation succeedingly as preferentially effective in mode selection actuation of an operator Since the message which tells an operator a purport to be set up by initial setting was shown in the location used as the hindrance of the mode selection on a display means By the message which tells an operator a purport to be set up by initial setting being shown, in the location used as the hindrance of the mode selection on a display means, it can express more clearly why copy actuation cannot be performed, and improvement in operability can be further aimed at in it.

[0027] A display means by which invention of claim 3 displays sheet paper cassette information, the selected mode, a message, an alert, etc. using display devices, such as liquid crystal, The mode selection means which repeats a transparence sheet-like touch panel switch on the display device of said display means, and enables selection in the mode according to detection of a depression location, The initialization means for performing an initial condition-setup of the equipment set by an operator's user-friendliness, A propriety judging means of operation by which the copy actuation by the mode which the operator chose judges whether activation [ with the established state in said initialization means ] on relation is possible, A propriety expression means of operation to use classification by color of LED etc. and to express the activation propriety of copy actuation, The mode which was going to possess the initiation directions means for directing initiation of copy actuation, and the operator tried to choose Mode selection actuation is succeedingly enabled as preferentially effective in mode selection actuation of an operator, even if it is in those with the mode accompanied by a setup with said initialization means, and the condition that the setup is not made in initial setting. Since the alert which tells an operator a purport to be set up by initial setting was displayed on the conspicuous location on a display means when this initiation directions means was operated, while the setup required of initial setting was not made by it By displaying the alert which tells an operator a purport to be set up by initial setting on the conspicuous location on a display means, when copy actuation initiation actuation is performed, while a setup required of initial setting has not been made by it Even if it is the case where it has been forgotten why for an operator to be unable to perform copy actuation, it can be made to be able to reconfirm, and improvement in operability can be aimed at further.

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[Translation done.]